

### **REMARKS**

The above amendments are made in response to the Non-final Office Action dated October 3, 2008. The Examiner's reconsideration is respectfully requested in view of the above amendment and the following remarks.

Claims 1, 5, 6, 9, 13, 14, 18, 22 and 23 have been amended to more clearly define the subject matter of the claimed invention. Claims 7, 15 and 24 have been cancelled. No new matter has been introduced by these amendments.

Claims 1-6, 8-14, 16-23, 25 and 26 are thus pending in the present application.

### **Claim Rejections Under 35 U.S.C. § 103(a)**

#### **Rejection on Claims 1-8**

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tachibana, et al. (U.S. Patent No. 4,035,563; hereinafter, "Tachibana") as evident by Gloesener, et al. (U.S. Patent No. 5,214,092; hereinafter, "Gloesener"), in view of the product literature of Fujian Sannong Calcium Carbonate Co., on Nano calcium carbonate (1993) (hereinafter, "Fujian"), and further in view of Polanco, et al. (U.S. Patent Application Publication No. 2003/0203695; hereinafter, "Polanco").

In order for an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed.

Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996). See MPEP 2143.

Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Further, even assuming that all elements of an invention are disclosed in the prior art, an Examiner cannot establish obviousness by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would have impelled one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28 U.S.P.Q. 1300 (Bd. Pat. App. Int. 1993). The references, when viewed by themselves and not in retrospect, must suggest the invention. *In re Skill*, 187 U.S.P.Q. 481 (C.C.P.A. 1975).

In response, Applicants have amended Claims 1, 5 and 6 to more clearly define the subject matter of the claimed invention and thus overcome the present reason for rejection. Claim 7 has been cancelled, of which subject matter is incorporated into the amended Claim 1.

Claim 1 is independent, and Claims 2-6 and 8 are dependent directly or indirectly from Claim 1.

The amended Claim 1 reads as follows:

A nano calcium carbonate/vinyl chloride monomer dispersion composition comprising:

a vinyl chloride monomer;  
nano calcium carbonate; and

a lipophilic dispersing agent, which comprises 1-30 parts by weight of nano calcium carbonate per 100 parts by weight of the vinyl chloride monomer,

wherein the nano calcium carbonate is dispersed in the vinyl chloride and the surface of nano calcium carbonate is modified by being treated with a metal salt of an organic acid; and

wherein the lipophilic polymer has a homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, has a functional group of phosphoric acid, carboxylic acid or its salt or ester so that it is chemically compatible with the modified surface of the nano calcium carbonate

(Emphasis added)

As above, the claimed invention is drawn to a *nano calcium carbonate/vinyl chloride monomer dispersion composition*, which includes a *lipophilic dispersing agent with a specific amount*. The lipophilic dispersing agent is further limited to have a *homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, a functional group of phosphoric acid, carboxylic acid or its salt or ester*.

In the outstanding Office Action, the Examiner has stated that the process of Tachibana involves the precipitation of the calcium carbonate while preparing a mixture comprising vinyl chloride monomers in the presence of lipophilic dispersing agents. In this regard, Applicants have further limited the lipophilic dispersing agent to have a *homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, a functional group of phosphoric acid, carboxylic acid or its salt or ester*, as recited in the amended Claim 1.

Thus, Applicants respectfully submit that none of the cited references, either alone or in combination, does not teach or suggest the lipophilic dispersing agents having a *homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, a functional group of phosphoric acid, carboxylic acid or its salt or ester*, as recited in the amended Claim 1.

Therefore, it is submitted that the cited references, either alone or in combination, fail to teach or suggest the subject matter claimed in the amended Claim 1, and thus *no suggestion or motivation* exists in the cited references. Accordingly, *prime facie* obviousness does not exist regarding the subject matter claimed in Claim 1 with respect to the cited references. Applicants respectfully submit that Claim 1 is now allowable over the cited references.

Claims 2-6 and 8 are also believed to be allowable, by virtue of their direct or indirect dependency from Claim 1.

Rejection on Claims 1-26

Claims 1-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tachibana as evident by Gloesener in view of Fujian, in view of Polanco, and further in view of Mathur, et al. (U.S. Patent No. 4,980,395: hereinafter, "Mathur") as evident by Detterman (U.S. Patent No. 5,912,277: hereinafter, "Detterman").

In response, Applicants have amended Claims 1, 5, 6, 9, 13, 14, 18, 22 and 23 to more clearly define the subject matter of the claimed invention and thus overcome the present reason for rejection. Claims 7, 15 and 24 have been cancelled, of which subject matters are incorporated into the amended Claims 1, 9 and 18 respectively.

Claim 1 is independent and Claims 2-6 and 8 are dependent directly or indirectly from Claim 1.

Claim 9 is independent and Claims 10-14, 16 and 17 are dependent directly or indirectly from Claim 9.

Claim 18 is independent and Claims 19-23, 25 and 26 are dependent directly or indirectly from Claim 18.

Regarding the independent Claim 1 and its dependent Claims 2-6 and 8, Applicants believes that the above discussion applies in similar manners.

The amended independent Claims 9 and 18 are directed to a method for preparing a PVC based nanocomposite resin composition, and include *adding a lipophilic dispersing agent*. The lipophilic dispersing agent is further limited to have *a homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, a functional group of phosphoric acid, carboxylic acid or its salt or ester*.

In the outstanding Office Action, the Examiner has stated to the effect that the rejection reason for Claim 1 applies to Claims 9 and 18.

In response, Applicants have further limited the lipophilic dispersing agents so to have *a homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, a functional group of phosphoric acid, carboxylic acid or its salt or ester, as recited in the amended Claims 9 and 18.*

Thus, Applicants respectfully submit that none of the cited references, either alone or in combination, does not teach or suggest the lipophilic dispersing agents having *a homopolymer selected from the group consisting of polyolefin, polyether, polymethacrylate, polyacrylate, polyacetate, polyester and polyurethane or a copolymer thereof as a main chain, and at its side chain, a functional group of phosphoric acid, carboxylic acid or its salt or ester, as recited in the amended Claims 9 and 18.*

Therefore, it is submitted that the cited references, either alone or in combination, fail to teach or suggest the subject matter claimed in the amended Claims 9 and 18, and thus *no suggestion or motivation* exists in the cited references. Accordingly, *prime facie* obviousness does not exist regarding the subject matter claimed in Claims 9 and 18 with respect to the cited references. Applicants respectfully submit that Claims 9 and 18 are now allowable over the cited references.

Claims 10-14, 16 and 17, and Claims 19-23, 25 and 26 are also believed to be allowable over the cited references, by virtue of their direct or indirect dependency from Claims 9 and 18 respectively.

Applicants respectfully request the Examiner to review these submission and withdraw the rejections on Claims 1-26 under 35 U.S.C. § 103.

**Conclusion**

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Reconsideration and subsequent allowance of this application are courteously requested.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

The Examiner is invited to contact Applicants' Attorneys at the below-listed telephone number with any questions or comments regarding this Response or otherwise concerning the present application.

Respectfully submitted,

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